IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :

TAKASHI OHNO ET AL. : EXAMINER: ANGEBRANNDT, MARTIN J.

SERIAL NO.: 09/919,846 :

FILED: AUGUST 2, 2001 : GROUP ART UNIT: 1756

FOR: OPTICAL INFORMATION RECORDING MEDIUM AND OPTICAL RECORDING METHOD :

DECLARATION UNDER 37 CFR 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Now comes Takashi Ohno who deposes and says that:

1. I am one of the joint inventors of the above-identified application.

2. I graduated from Faculty of Science, Tohoku University, Graduate School of Science, Department of Physics, in 1989, and have been in the employ of Mitsubishi Chemical Corporation since 1989 and have been on loan to Mitsubishi Kagaku Media Co., Ltd. New Products Strategy Center since 2003 as Dept. 1 Manager and engaged in research and development of optical information recording media for more than 14 years.

3. I have worked on the following experiments.

(1) Preparation of optical information recording media

Disk 1:

On a polycarbonate substrate, 230 nm of a $(ZnS)_{80}(SiO_2)_{20}$ layer, 20 nm of a $(Sb_{71}Te_{29})_{89}Ge_5Zn_6$ recording layer, a 20 nm of a $(ZnS)_{80}(SiO_2)_{20}$ layer and 200 nm of a $Al_{97.5}Ta_{2.5}$ layer were sequentially laminated by magnetron sputtering, and an ultraviolet ray-curable resin was further coated in a thickness of about 4 μm to obtain Disk 1.

Disk 2:

Disk 2 was prepared in the same manner as Disk 1 except that the composition of the recording layer was changed to $(Sb_{71}Te_{29})_{95}Ge_5$.

Disk 3:

Disk 3 was prepared in the same manner as Disk 1 except that the composition of the recording layer was changed to $(Sb_{71}Te_{29})_{89}Ge_5Cu_6$.

Disk 4:

Disk 4 was prepared in the same manner as Disk 1 except that the composition of the recording layer was changed to $(Sb_{71}Te_{29})_{89}Ge_5Si_6$.

(2) Initialization of the optical information recording media (initial crystallization)

Disks 1-4 were subjected to melt initialization under the following conditions. Namely, an elliptic laser beam at a wavelength of 810 nm having a long axis of about 75 μm and a short axis of about 1 μm with a laser power of 300 mW was irradiated onto the disks rotating at a linear velocity of 4.5 m/s at a beam-transferring speed (in the radial direction of the disk) of 7 μm/rotation so that the long axis of the laser beam would be perpendicular to the guide groove formed on the substrate.

Disks 1 and 4 were initialized (succeeded in initial crystallization), whereas Disks 2 and 3 were not.

Then, the linear velocity was changed from 4.5 m/s to 6 m/s, and Disk 1 was initialized, while Dick 4 was not initialized.

Therefore, among Zn, Cu and Si, Zn facilitates initial initialization most.

4. The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

5. Further declarant saith not.

_____ _____

Date Takashi Ohno